

# United States of America

- One of the top CO2 emitting countries of 2010.
- The U.S. government, since 2008, has been supporting the decision to transfer from fossil fuel energy to alternative energy (even though the government decided to disregard the Kyoto Protocol in March of 2001).
- The US has signed but not ratified the Kyoto Protocol.
- The United States does not only want to reduce CO2 emissions, but also other greenhouse gases that accelerate the rate of temperature increase, like methane and hydro fluorocarbons.
- Climate related changes are already being observed in the US: increased heavy rain storms, rising temperatures, rising sea level, melting glaciers and permafrost, longer growing season, droughts, and changes in river flows.

# Japan

- One of the top largest CO2 emitting countries of 2010
- Japan is the world leader in the development of climate-friendly technologies.
- Japan is likely to experience more frequent heat waves, stronger typhoons, and declines in rice production Japan's government is addressing climate change by reducing the amount of emissions of CO2.
- Signed and ratified Kyoto Protocol

# China

- One of the top largest CO2 emitting countries of 2010.
- China's government has ratified the Kyoto Protocol, but is not required to reduce its carbon emissions under the current agreement.
- Climate related changes are already being observed in China: rising temperatures, rising ocean temperatures, rising sea level, increased droughts and floods.
- Rising sea levels are especially dangerous since many of China's largest and most economically developed cities are located on the coast.
- There is the possibility of severe water shortages in the near future.

# Germany

- One of the top largest CO2 emitting countries of 2010.
- The German government has been pushing for air pollution control policies.
- Climate related changes are already being observed in Germany: warmer winters, lower snowfall, increased summer heat waves, and an increase in Lyme disease.
- Germany signed and ratified the Kyoto Protocol.

# India

- India has signed and ratified the Kyoto Protocol, but is not required to reduce its carbon emissions under the current agreement.
- India's interest is to ensure that the world moves to a smaller carbon footprint.
- India is very vulnerable to climate change. Agriculture and rural development will be hit the hardest.
- Climate related changes are already being observed in India: longer and stronger heat waves, increased number of cyclones, salinization of the coastline, increased number of mosquito and water borne diseases, and declining agricultural and fishery production.
- Studies indicate that over 50% of India's forests are likely to experience shift in forest types, adversely impacting associated biodiversity, regional climate dynamics as well as livelihoods based on forest products.
- One of the top largest CO2 emitting countries of 2010.

# Switzerland

- The Swiss government is aiming to reduce carbon emissions.
- Most of the energy in 2008 was provided by hydropower plants and nuclear power plants. Signed and ratified the Kyoto Protocol.
- Due to changing temperatures, less heating energy will be required in winter and more cooling energy will be required in the summer.
- Swiss agriculture will benefit from a longer growing season caused by warmer temperatures.

# Canada

- One of the top largest CO2 emitting countries of 2010.
- Government is aiming to reduce CO2 emissions for Canada's transportation and energy sectors.
- Signed and ratified the Kyoto Protocol. However, Canada withdrew from the Kyoto Protocol in 2011 because it faced over \$14 billion in fines if emissions reduction targets were not met.
- Climate related changes are already being observed in Canada: higher temperatures, lower precipitation, droughts, changes to forest ecosystems, and melting glaciers and sea ice.

# United Kingdom

- One of the top largest CO<sub>2</sub> emitting countries of 2010.
- The U.K. government has been implementing policies like the United Kingdom Climate Change Programme and the Climate Change Act (both try to reduce carbon emissions).
- Signed and ratified the Kyoto Protocol.
- The UK will have hotter and drier summers and warmer and wetter winters.
- The sea level around the UK rose by almost 4 inches in the 20th century



# Egypt

- Egypt is very vulnerable to climate changes; rise in sea level, wind rates, decrease in fresh water and food supplies.
- With that, Egypt takes aim to produce 20% of their energy from renewable resources.
- Signed and ratified the Kyoto Protocol.
- Climate change threatens Egypt's tourism industry (tourist focused cities such as !Alexandria are threatened by rising sea levels and dying coral reefs would no longer be popular destinations).

# Indonesia

- One of the largest greenhouse gas emitting countries, largely due to deforestation.
- The government is determined to cut their carbon footprint, but there are few incentives to develop renewable energy.
- Signed and ratified the Kyoto Protocol.
- Indonesia is seeing an increase in the severity and number of cases of malaria and Dengue fever.
- Indonesia faces more intense rainfall and flooding, and decreased food security.
- Indonesia is home to 18% of the world's coral reefs and they are already experiencing losses due to rising ocean temperatures and acidification.

# Colombia

- One of the greenest countries in the world according to a study in 2010.
- Wind and solar power energy are widespread methods to produce energy in Colombia.
- More than 70% of Colombia is vulnerable to climate change.
- Under current climate trends, glaciers in the country will completely disappear in the next 100 years.
- Rising sea levels will negatively affect 1.4 million people and mangrove forests.
- Ratified the Kyoto Protocol.

# Iran

- One of the top largest CO2 emitting countries of 2010.
- The Iranian government wants to cut their carbon dioxide emissions due to the drought Iran is experiencing.
- Climate related changes are already being observed in Iran: severe droughts in some areas, rising temperatures, rising sea levels, and reductions in agricultural production.

# Norway

- Norway has discovered a large amount of oil in the Norwegian Sea that was uncovered by melting sea ice.
- Norway is a rich country that is in a good position to adapt to climate change.
- Norway faces increased precipitation, increased wind speeds, an extended flood season, more avalanches, and increased agricultural production from a longer growing season.
- Signed and ratified the Kyoto Protocol

# Tanzania

- Kilimanjaro glaciers and snow cover are retreating.
- Loss of cloud forests around Kilimanjaro means that 1 million people have less drinking water.
- Tanzania is seeing major declines in lake fish populations.
- Coral reefs are dying, which leads to a decrease in tourism.
- Ratified the Kyoto Protocol.

# Russian Federation

- One of the top largest CO2 emitting countries of 2010.
- Growing season is now longer so Russia is able to increase agricultural production.
- Russia has the largest natural gas reserves, second largest coal reserves, and eighth largest oil reserves.
- Climate related changes are already being observed in Russia: heat waves, increase in heavy rains in western Russia and decrease in rainfall in Siberia, increase in floods, increase in wild fires, and polar bears face high risk of extinction.
- Signed and ratified the Kyoto Protocol.

# Bangladesh

- 2/3 of Bangladesh is than 5 meters above sea level, so it especially vulnerable to rising sea levels and floods.
- Bangladesh is one of the countries most in danger of global warming, due to deadly floods, rising in sea levels, floods, and drought in the north.
- More frequent “super-cyclones” are already occurring. They used to happen once every 20-30 years, but 2 happened in 2007-2008.
- Salt water floods fields so many farmers are adapting by growing more salt-tolerant crops.
- Ratified the Kyoto Protocol.



# Tuvalu

- If average sea level continues to rise, there will be nothing left of Tuvalu in 50 years.
- Tuvalu is the second lowest elevated country in the world.
- Tuvalu has been buying land in New Zealand to relocate their population (Tuvalu's population is approximately 10,000 people).
- Climate related changes are already being observed in Tuvalu: coastal erosion, saltwater intrusion, increase in mosquito and water borne diseases, inadequate drinking water, and a decrease in fish population.